



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

X1

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,254	12/14/2001	Toshiaki Nakanishi	29288.4500	6101
20322	7590	10/18/2004	EXAMINER	
SNELL & WILMER ONE ARIZONA CENTER 400 EAST VAN BUREN PHOENIX, AZ 850040001				STREGE, JOHN B
ART UNIT		PAPER NUMBER		
		2625		
DATE MAILED: 10/18/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/017,254	NAKANISHI ET AL.	
	Examiner	Art Unit	
	John B Strege	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 14 December 2001.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-5,7-12 and 14 is/are rejected.
 7) Claim(s) 6 and 13 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 14 December 2001 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/14/01</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,5,7-8,12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Arai et al. JP 11073948 (hereinafter Arai).

Claim 1 discloses, "an inspection apparatus for an electrode plate-connected structure for a secondary cell for inspecting each bonding portion of an electrode plate-connected structure for a secondary cell including a plurality of electrode plates which are arranged in parallel to one another at prescribed intervals and are perpendicularly connected to a power collecting plate, the apparatus characterized by comprising: a lighting section for irradiating light to each of the bonded portions of the plurality of electrode plates and the power collecting plate of the electrode plate-connected structure for a secondary cell; a light receiving section for detecting a projected image of each of the bonded portions based on the light irradiated to the electrode plate-connected structure for a secondary cell by the lighting section; and an evaluation section for evaluating a bonding state of each of the bonding portions based on the projected image of each of the bonded portions detected by the light receiving section."

Arai discloses an inspection device for an electrode plate group of a storage battery capable of detecting the number and the position of the separators (bonded

portions) of the electrode plate group and determining with high reliability whether the electrode group is proper (from the translated abstract, Problem to be solved section). As seen in figure 1 Arai discloses a lighting section 14 for irradiating light to each of the separator portions 3 of an electrode plate group 1. The separators must inherently be bonded to the electrode plates. A ccd camera 13 receives a projected image of the electrode plates and separators, and the image processing device 15 evaluates the condition of the electrode plate group in which inherently it is evaluating the bonding state of the separator portions (from the translated abstract, Solution section).

Regarding claim 5, Arai discloses computing the pitch (read as inclination) between the separators 3.

Regarding claim 7, as seen in figure 1 the ccd camera 13 receives light reflected by each of the separators (bonded portions).

Claim 8 is similar to claim 1 except claim 8 is a method claim. Thus the same arguments used for claim 1 apply equally to the rejection of claim 8.

Claim 12 is similar to claim 5, thus the same arguments used for claim 5 apply equally to the rejection of claim 12.

Claim 14 is similar to claim 7, thus the same arguments used for claim 7 apply equally to the rejection of claim 14.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2625

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. JP 11073948 (hereinafter Arai).

Claim 2 is dependent on claim 1 rejected above and discloses that the light receiving section receives light passing through both sides of each of the electrode plates.

Arai does not explicitly disclose that the light receiving section receives light passing through both sides of each of the electrode plates. At the time of the invention it would have been obvious to one of ordinary skill in the art to receive light passing through both sides of each of the electrode plates. Applicant has not disclose that receiving light passing through both sides of the electrode plates provides an advantage, is used for a particular purpose or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well receiving light reflected from both sides of the electrode plates as taught by Arai because both methods receive an accurate image of the bonding portions of the electrode plates. Therefore it would have been obvious to modify Arai to receive light passing though both sides of the electrode plates as stated in claim 2.

Claim 9 is similar to claim 2, thus the same arguments used for claim 2 apply equally to claim 9.

Art Unit: 2625

5. Claim 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. JP 11073948 (hereinafter Arai) in view of Honda et al. USPN 6,249,598 (hereinafter "Honda").

Arai discloses comparing computed values from the image data with reference data (last sentence of the English translation of the abstract). Arai does not explicitly disclose measuring a height of a lowest point of each of the bonded portions based on the projected image.

Honda discloses a solder testing apparatus comprising image processing means for an image of a soldered portion in order to determine whether it is good or bad (stated at least in the abstract). Figure 11 illustrates the characterizing amounts of a soldered portion including the fillet height 1101 (col. 9 lines 29-38). Honda teaches that when the fillet height is high then a favorable connection is formed (col. 9 lines 45-55). Figure 13 demonstrates the determination of whether or not a fillet height is good (col. 10 lines 13-31).

Arai and Honda are analogous art because they are from the same field of endeavor of inspection using image processing.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Arai and Honda to measure the height of the bonded portion and compare it to a reference value. The motivation for doing so would be to determine if the connection is favorable. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Arai and Honda to obtain the invention as specified in claim 3.

Claim 10 is similar to claim 3, thus the same argument used for claim 3 applies equally to claim 10.

6. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al. JP 11073948 (hereinafter Arai) in view of Stavis et al. USPN 3,773,422.

Arai does not explicitly disclose detecting a thickness of each of the plurality of electrode plates based on the projected image of the bonded portions. Arai is however concerned with determining if the electrode plate group is proper, and one way of doing so would be to measure the width of the plates as is well known in the art of inspection using images.

Stavis discloses a system for calculating linear dimensions using a television camera (col. 1 lines 1-8).

Arai and Stavis are analogous art because they are from the same field of quality inspection.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Arai and Stavis to measure the thickness of the electrode plates. The motivation for doing so would be to determine the quality of the battery. Thus it would have been obvious at the time of the invention to combine Arai and Stavis to obtain the invention as specified in claim 4.

Claim 11 is similar to claim 4, thus the same arguments used for the rejection of claim 4 apply equally to claim 11.

Allowable Subject Matter

Claims 6 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B Strege whose telephone number is (703) 305-8679. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JS

BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600